

WHAT IS CLAIMED IS:

1. A broadcasting signal receiver apparatus comprising:
 - a security device for storing security information on a broadcasting entity, and for extracting transmission information for receiving a
 - 5 broadcasting signal modulated in a predetermined modulation mode from a control signal transmitted from an apparatus of the broadcasting entity, and
 - a receiver for receiving the broadcasting signal transmitted from said apparatus of the broadcasting entity based on the extracted
 - 10 transmission information,
 - wherein said security device is separated from said receiver, and can be mounted in said receiver,
 - wherein said broadcasting signal receiver apparatus further comprises:
 - 15 a tuner for controlling a frequency of the received broadcasting signal to select a channel of a predetermined broadcasting signal;
 - a demodulator capable of demodulating the broadcasting signal transmitted from said apparatus of the broadcasting entity in a plurality of demodulation modes corresponding to modulation modes of
 - 20 modulation systems of the broadcasting signal, said demodulator demodulating the broadcasting signal of the channel selected by said tuner in a demodulation mode which is set among the plurality of demodulation modes;
 - a first controller for controlling the demodulation mode of said
 - 25 demodulator;
 - a synchronization judgment unit for judging whether or not said demodulator is synchronized with the received broadcasting signal, and for outputting a synchronization judgment result signal;

a device detector for detecting whether or not said security device is mounted into said receiver; and

a second controller for, when said device detector detects that said security device is not mounted into said receiver, controlling said tuner, said demodulator, and said first controller, so as to change at least one of the demodulation mode for said broadcasting signal and the frequency of said broadcasting signal, and to retrieve the broadcasting channel on which the transmission information on the broadcasting signal is transmitted, for receiving the broadcasting signal on said retrieved broadcasting channel, for, when said synchronization judgment unit judges that said demodulator is synchronized with the broadcasting signal, extracting the transmission information on the broadcasting channel from the broadcasting signal demodulated by said demodulator, and for receiving the broadcasting signal based on the extracted transmission information on the broadcasting signal.

2. The broadcasting signal receiver apparatus as claimed in claim 1,

wherein said second controller initializes a demodulation mode control processing executed by said first controller immediately after the frequency of said tuner is changed.

3. The broadcasting signal receiver apparatus as claimed in claim 1,

wherein said first controller controls at least one of a modulation rate, filter coefficients, and a constellation which are set to said demodulator based on the synchronization judgment result signal from said synchronization judgment unit until said demodulator is synchronized with the received broadcasting signal.

4. The broadcasting signal receiver apparatus as claimed in claim

1,

wherein said demodulator comprises a carrier recovery circuit which reproduces a carrier wave of the received broadcasting signal, and

wherein said synchronization judgment unit judges whether or not
5 said demodulator is synchronized with the received broadcasting signal based on a phase error of a demodulated signal reproduced by said carrier recovery circuit.

5. The broadcasting signal receiver apparatus as claimed in claim

1,

10 wherein said demodulator comprises a clock recovery circuit which reproduces a clock signal of the received broadcasting signal, and

wherein said synchronization judgment unit judges whether or not
said demodulator is synchronized with the received broadcasting signal
based on a phase error of the clock signal reproduced by said clock signal
15 recovery circuit.

6. The broadcasting signal receiver apparatus as claimed in claim

1,

wherein said demodulator comprises an error correction circuit which corrects an error of the received broadcasting signal, and

20 wherein said synchronization judgment unit judges whether or not said demodulator is synchronized with the received broadcasting signal based on whether or not a frame synchronous signal outputted from said error correction circuit can be detected.

7. The broadcasting signal receiver apparatus as claimed in claim

25 1,

wherein each of said first controller and said synchronization judgment unit is constituted by a hardware circuit.

8. An apparatus for controlling a demodulation mode comprising:

a demodulator capable of demodulating a received signal modulated in a predetermined modulation mode, in a plurality of demodulation modes corresponding to modulation modes of modulation systems of the received signal, said demodulator demodulating the received signal in a demodulation mode which is set among the plurality of demodulation modes;

a controller for controlling the demodulation mode of said demodulator; and

a synchronization judgment unit for judging whether or not said demodulator is synchronized with the received signal, and for outputting a synchronization judgment result signal,

wherein said controller controls the demodulation mode of said demodulator based on the synchronization judgment result signal from said synchronization judgment unit until said demodulator is synchronized with said received signal.

9. The apparatus for controlling a demodulation mode as claimed in claim 8,

wherein said controller controls at least one of a modulation rate, filter coefficients, and a constellation which are set to said demodulator based on the synchronization judgment result signal from said synchronization judgment unit until said demodulator is synchronized with said received signal.

10. The apparatus for controlling a demodulation mode as claimed in claim 8,

wherein said demodulator comprises a carrier recovery circuit which reproduces a carrier wave of the received signal, and

wherein said synchronization judgment unit judges whether or not said demodulator is synchronized with the received signal based on a

phase error of a demodulated signal reproduced by said carrier recovery circuit.

11. The apparatus for controlling a demodulation mode as claimed in claim 8,

5 wherein said demodulator comprises a clock recovery circuit which reproduces a clock signal of the received signal, and

wherein said synchronization judgment unit judges whether or not said demodulator is synchronized with the received signal based on a phase error of the clock signal reproduced by said clock recovery circuit.

10 12. The apparatus for controlling a demodulation mode as claimed in claim 8,

wherein said demodulator comprises an error correction circuit which corrects an error of the received signal, and

15 wherein said synchronization judgment unit judges whether or not said demodulator is synchronized with the received signal based on whether or not a frame synchronous signal outputted from said error correction circuit can be detected.

13. The apparatus for controlling a demodulation mode as claimed in claim 8,

20 wherein each of said controller and said synchronization judgment unit is constituted by a hardware circuit.